

**Amendments to the Specification**

Please add the following new heading and paragraph before paragraph [0001], and renumber all subsequent paragraphs.

**Reference to related application**

[0001] This is a formal application based on and claiming the benefit of provisional application no. 60/400,037, filed August 2, 2002.

Please replace the Fig. 44 description sub-paragraph within paragraph [0011] with the following amended paragraph:

Fig. 44 is a side view of the tool bit or accessory shown in Fig. 44 43.

Please replace paragraphs [0024], [0025], [0030], [0040], [0045], [0047] and [0051] with the following amended paragraphs:

**[0024]** The sleeve **24** may be manufactured in a variety of methods including pressing, powder metal, injection moulding, die-casting, machining or a combination thereof but in the preferred embodiment is a die-cast piece. The preferred embodiment further comprises an aligner **44** 45, formed on the internal diameter of the sleeve **24**, sized to fit within the alignment slot **48** in the first end **36** of the inner housing **12**. The aligner **44** 45 provides support when the chuck **10** is in use to prevent the sleeve **24** from unwanted rotational motion. The aligner also serves as a means to guide the sleeve when it is assembled over the inner housing.

**[0025]** When assembled to the inner housing **12**, the sleeve **24** is oriented so that the aligner **44** 45 is inserted into the alignment slot **48** with the internal cam **66** contacting the spring cap **28** covering the central tang **34**. The sleeve **24** fits over the entire inner

housing **12** to retain the spherical balls in the set of holes **52**, the compression spring **14**, and the aligner **44** **45**.

**[0030]** In the locked position, the chuck **10** is generally at rest. As can be seen in Figure 6, the inclined face **58** and the cross-section **60** in the second end **56** of the sleeve **24** rests atop the shoulder **50** of the inner housing **12** to retain the spherical balls within the holes **52**. Furthermore, the first end **54** of the sleeve **24** rests against the tab **68** of the inclined plate causing the plate to be inclined against the inner face **72** of the end cap **26**. Rotation of the shank in a counter clockwise direction causes the torsion spring **16** to further tighten its grip on the shank by decreasing the internal diameter of the spring **106**.

**[0040]** The inner housing **102** also comprises an annular groove **121** for housing a retaining ring **123** (as shown in Figure 4 8) which prevents removal of the sleeve after assembly.

**[0045]** In order to change or remove the tool bit or accessory, the chuck **100** is placed in the open position. By retracting the sleeve **104** away from the tool bit or accessory, in the direction indicated by arrow **140**, the shoulder **136** contacts the end tang **112** and directs the end tang **112** along the angular slot **120** towards the opposite end of the angular slot **120**. Since the other end of the torsion spring **106** is restricted from moving by the inner housing (as shown in Figure 11), the torsion spring **16** **106** is unwound as the end tang **112** is directed along the angular slot causing the internal diameter of the torsion spring **106** to increase. The movement of the sleeve **104** also causes the first end **114** of the inner housing **102** to protrude through the hole **125** in the sleeve **104**. The increase in the internal diameter of the spring **106** causes the grip of the spring **106** on the shank to loosen, allowing the shank to be removed. After the shank has been removed, the user may place another shank into the inner housing **102** via the opening **125** in the sleeve **104** as schematically showed in Figure 13. Release of the sleeve by the user causes the chuck to return to the locked position and the internal diameter of

the torsion spring to decrease which allows the spring to grip the shank of the selected tool bit or accessory.

**[0047]** Figs. 30 to 48 show an alternative embodiment of the chuck using an inclined plate to capture the shank of a tool bit or accessory. This is similar in principle to the mechanism described in application no. **09/783,082**, filed February 15, 2001 and assigned to the present inventors' company, Maxtech Manufacturing Inc. In this embodiment, the chuck **200** has a sleeve **224** over an inner housing **201**, biased against an end cap **204** by a spring **202**, such as a compression, or biasing, spring. The inner housing **201** has a central channel for receiving and holding the shank of a tool bit or accessory. The end cap **204** is inserted into a central opening in the distal end of the inner housing **201**. The end cap **204**, shown in Figs. 47 and 48, has a central aperture **234** having a comparable size and to that of the shank **211** **212** of a tool bit or accessory **212** **211**. The end cap **204** has an inner surface, which is on an incline relative to the axis of the tool.

**[0051]** Figs. 39 and 40 show views of the inner housing. The inner housing **201** has a threaded central channel **203** for joining to the rotary tool, and a machined channel into which the shank **212** of a tool bit or accessory **211** fits. The outer surface of the inner housing **201** has an annular shoulder **205** where the compression spring **202** and the sleeve **224** fits over the inner housing. The inner housing **201** also has an end portion **210** with a central channel **226** into which the end cap **204** fits. The end portion **210** has two slots **207**, **208** in the housing, radially opposite one another. The first slot **207** is axially longer than the second slot **208**. The protuberances **222** **223** of the inclined plate **220** shown in Figs. 45 and 46, fit into these slots **207**, **208**. The protuberance in the first elongated slot **207** moves along the slot **207** when the sleeve **224** is retracted and released.